

O BEST AVAILABLE COPY O

ABSTRACT OF THE DISCLOSURE

Externally supplied program data is latched into data latch circuits DLL and DLR. A judgment is made as to whether or not the latched program data corresponds to any threshold value of multi-levels every time each of plural programming operations is carried out. The program control information corresponding to the judgment result is latched into a sense latch circuit SL. Based upon the latched program control information, the programming operation for setting threshold voltages having multi-levels to a memory cell is carried out in a stepwise manner.

Even when the programming operation is ended, the externally supplied program data is left in the data latch circuit. Even when the programming operation of the memory cell is retried due to the overprogramming condition, the program data is no longer required to be again received from the external device.